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Today's Date: November 3, 2006

To: **Examiner D. Q. Dinh**, Art Unit: 2674 FAX: (571) 273-8300

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In re Application of Shunichi HOSOYAMADA

Serial No.: **09/925,601**

For: METHOD AND CIRCUIT FOR DRIVING LIQUID CRYSTAL DISPLAY AND IMAGE DISPLAY DEVICE

Contents: 1. Appellant's Brief on Appeal (34 pages), as revised a second time per the second Notification of Non-Compliant Appeal Brief in the Office Action mailed on October 27, 2006

It is noted, for the record, that the previous submission of October 17, 2006, was indeed compliant. Appellants submit that the confusion was that the evaluator failed to recognize that all claims were in the Appendix regardless of whether they were being actively appealed. Appellants also submit that the USPTO needs to place appropriate instructions/examples in the MPEP, instead of allowing each evaluator to make up their respective interpretation of the procedures as this new appeal process continues to evolve, causing many hours of re-work by practitioners, as has happened in this appeal, wherein the brief was not even subject to the new rules when it was originally submitted..

CERTIFICATION OF TRANSMISSION

I certify that I transmitted via facsimile to (571) 273-8300 this second version of the revised Appellant's Brief on Appeal to the USPTO on November 3, 2006.

Frederick E. Cooperrider
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of

Shunichi HOSOYAMADA

Serial No.: 09/925,601 Group Art Unit: 2674

Filed: August 10, 2001 Examiner: Dinh, D. Q.

For: **METHOD AND CIRCUIT FOR DRIVING LIQUID CRYSTAL DISPLAY AND IMAGE DISPLAY DEVICE**

Commissioner of Patents
Alexandria, VA 22313-1450

APPELLANTS' BRIEF ON APPEAL

Sir:

Appellants respectfully appeal the rejection of claims 1-18, 25-42, 49-51, 53, and 54 in the Office Action mailed on June 25, 2004. It is noted that this present version reflects the requirement in the Notification of Non-Compliant Appeal Brief mailed on September 27, 2006, that the Supplemental Appeal Brief filed on September 24, 2004, be updated to comply with the latest requirements for appeal briefs, including an indication of the claim allowability provided in the Office Action mailed on June 25, 2004, wherein prosecution was re-opened by the Examiner following submittal of the original Appeal Brief. This Appeal Brief, therefore, is presented in the new format, and includes the contents of the Supplemental Brief, as updated for the claims indicated as allowable after the original Appeal Brief was filed on March 30, 2004, and as appropriately revised to complete an Appeal Brief in the new format, as based on the later rejection in the June 25, 2004 Office Action.

I. REAL PARTY IN INTEREST

The real party in interest is NEC LCD Technologies, Ltd., assignee of 100% interest of the above-referenced patent application.

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II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellant, Appellant's legal representative or Assignee which would directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1-54 are all of the claims presently pending in the application. In the Office Action mailed on June 25, 2004, the Examiner indicated that claims 19-24, 43-48, and 52 are allowable. Claims 1-18, 25-42, 49-51, 53, and 54 stand rejected on prior art grounds.

More specifically, claims 1-18, 25-42, 49-51, 53, and 54 stand rejected under 35 USC §103(a) as unpatentable over Applicant's Admitted Prior Art, further in view of US Patent 5,790,092 to Moriyama.

The rejection is being appealed for claims 1-18, 25-42, 49-51, 53, and 54.

IV. STATUS OF AMENDMENTS

No amendments have been filed since the Office Action mailed on June 25, 2004. Therefore, the version of claims presented in the Appendix is the version of the Amendment Under 37 CFR §1.111, submitted on June 11, 2003.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The advantages provided by the claimed combination of the present invention include the following: reduction of cost; reduction of monochromatic flicker and flicker for display of images with non-white colors; and capability to minimize flicker over the entire screen, thereby preventing image persistence and allowing application to high-definition displays and larger displays.

<u>Independent Claim 1:</u>

1. (Rejected) A method for driving a liquid crystal display 1 (see Figure 2 and line 29 on page 18) in which a liquid crystal cell 4 (see Figure 2 and lines 1-13 on page 19) is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row

direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said method comprising (see Figures 6A, 6B, 8A, 8B):

reversing a polarity of each of said data signals for every 2n (n is a natural number) pieces of said scanning electrodes (see line 11 on page 1, wherein n = 1); and

reversing a polarity for every said signal electrode in said liquid crystal display and sequentially feeding each of said data signals having the reversed polarity to each of corresponding ones of said signal electrodes.

<u>Independent Claim 7:</u>

7. (Rejected) A method for driving a liquid crystal display 1 (see Figure 2 and line 29 on page 18) in which a liquid crystal cell 4 (see Figure 2 and lines 1-13 on page 19) is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said method comprising:

displaying a monochromatic color (see problem discussed for monochromatic color, as discussed in lines 6-15 on page 16) by reversing a data signal that changes, relative to a common potential being applied to one terminal of all said liquid crystal cells and during four consecutive scanning periods (see Fig. 1 and discussion at lines 4-20 on page 22), sequentially into a first signal having a first potential of a first polarity and a second signal having a second potential of said first polarity and into a first signal having a first potential of a second polarity and a second signal having a second potential of said second polarity, for every said signal electrode and by sequentially feeding said data signal having the reversed polarity to each of corresponding said signal electrodes (see Figures 6A, 6B, 8A, 8B).

<u>Independent Claim 13:</u>

13. (Rejected) A method for driving a liquid crystal display 1 (see Figure 2 and line 29 on page 18) in which a liquid crystal cell 4 (see Figure 2 and lines 1-13 on page 19) is mounted

at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said method comprising:

displaying shades of gray (see problem discussed for monochromatic color, as discussed in lines 6-15 on page 16) by reversing a polarity of a data signal having a potential corresponding to an intermediate transmittance between a maximum transmittance and a minimum transmittance of said liquid crystal cell for every 2n (n is a natural number) pieces of said scanning electrodes (see line 11 on page 1, wherein n = 1) in said liquid crystal display and for every said signal electrode and by sequentially feeding said data signal having the reversed polarity to each of corresponding said signal electrodes (see Figures 6A, 6B, 8A, 8B).

Independent Claim 25:

25. (Rejected) A driving circuit for a liquid crystal display 1 (see Figure 2 and line 29 on page 18) in which a liquid crystal cell 4 (see Figure 2 and lines 1-13 on page 19) is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit comprising (see Figures 6A, 6B, 8A, 8B):

a signal electrode driving circuit (Fig. 2, item 12) to reverse a polarity of each of said data signals for every 2n (n is a natural number) pieces of said scanning electrodes (see line 11 on page 1, wherein n = 1) and for every signal electrode in said liquid crystal display and to sequentially feed said each of said data signals having reversed polarity to each of corresponding said signal electrodes.

Independent Claim 31:

31. (Rejected) A driving circuit for a liquid crystal display 1 (see Figure 2 and line 29 on page 18) in which a liquid crystal cell 4 (see Figure 2 and lines 1-13 on page 19) is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row

direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit comprising (see Figures 6A, 6B, 8A, 8B):

a signal electrode driving circuit (Fig. 2, item 12) to reverse a data signal that changes, relative to a common potential being applied to one terminal of all said liquid crystal cells and during four consecutive scanning periods, (see Fig. 1 and discussion at lines 4-20 on page 22) sequentially into a first signal having a first potential of a first polarity and a second signal having a second potential of said first polarity and into a first signal having a first potential of a second polarity and a second signal having a second potential of said second polarity, for said every signal electrode and to sequentially feed said data signal having the reversed polarity to each of corresponding said signal electrodes.

Independent Claim 37:

37. (Rejected) A driving circuit for a liquid crystal display 1 (see Figure 2 and line 29 on page 18) in which a liquid crystal cell 4 (see Figure 2 and lines 1-13 on page 19) is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit comprising:

a signal electrode driving circuit (Fig. 2, item 12) to reverse a polarity of a data signal having a potential corresponding to an intermediate transmittance between maximum and minimum transmittance of said liquid crystal cell for every 2n (n is a natural number) pieces of said scanning electrode (see line 11 on page 1, wherein n = 1) in said liquid crystal display and for every said signal electrode and to sequentially feed said data signal having the reversed polarity to each of corresponding signal electrodes (see Figures 6A, 6B, 8A, 8B).

Independent Claim 49:

49. (Rejected) An image display device comprising:

a driving circuit for a liquid crystal display 1 (see Figure 2 and line 29 on page 18) in which a liquid crystal cell 4 (see Figure 2 and lines 1-13 on page 19) is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit including:

a signal electrode driving circuit (Fig. 2, item 12) to reverse a polarity of each of said data signals for every 2n (n is a natural number) pieces of said scanning electrodes and for every signal electrode in said liquid crystal display and to sequentially feed said each of said data signals having reversed polarity to each of corresponding said signal electrodes (see Figures 6A, 6B, 8A, 8B).

Independent Claim 50:

50. (Rejected) An image display device comprising:

a driving circuit for a liquid crystal display 1 (see Figure 2 and line 29 on page 18) in which a liquid crystal cell 4 (see Figure 2 and lines 1-13 on page 19) is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit including:

a signal electrode driving circuit (Fig. 2, item 12) to reverse a data signal that changes, relative to a common potential being applied to one terminal of all said liquid crystal cells and during four consecutive scanning periods (see Fig. 1 and discussion at lines 4-20 on page 22), sequentially into a first signal having a first potential of a positive polarity and a second signal having a second potential of said positive polarity and into a first signal having a first potential of a negative polarity and a second signal having a second potential of said negative polarity, for said every signal electrode and to sequentially feed said data signal having

the reversed polarity to each of corresponding said signal electrodes (see Figures 6A, 6B, 8A, 8B).

Independent Claim 51:

51. (Rejected) An image display device 1 (see Figure 2 and line 29 on page 18) comprising:

a driving circuit for a liquid crystal display in which a liquid crystal cell 4 (see Figure 2 and lines 1-13 on page 19) is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit including:

a signal electrode driving circuit (Fig. 2, item 12) to reverse a polarity of a data signal having a potential corresponding to an intermediate transmittance between maximum and minimum transmittance of said liquid crystal cell for every 2n (n is a natural number) pieces of said scanning electrode (see line 11 on page 1, wherein n = 1) in said liquid crystal display and for every said signal electrode and to sequentially feed said data signal having the reversed polarity to each of corresponding signal electrodes (see Figures 6A, 6B, 8A, 8B).

Independent Claim 53:

53. (Rejected) A method of reducing flicker on a liquid crystal display (see Figure 2 and line 29 on page 18), said method comprising:

reversing a polarity of first display signals related to a horizontal dimension in a first uniform interval; and

reversing a polarity of second display signals related to a vertical dimension in a second uniform interval,

wherein concurrent uniform reversals of polarity in both said horizontal dimension and said vertical dimension causes a flicker to be at an angle slanted relative to said horizontal dimension and said vertical dimension (see Figures 6A, 6B, 8A, 8B).

Independent Claim 54:

54. (Rejected) A liquid crystal display (see Figure 2 and line 29 on page 18), comprising:

a plurality of scanning electrodes (Fig. 2, items 2_1-2_m) placed at specified intervals in a row direction;

a plurality of signal electrodes (Fig. 2, items 3_1-3_n) placed at specified intervals in a column direction; and

a controller (Fig. 2, item 11) that reverses a polarity, in a first predetermined uniform interval, of display signals to said scanning electrodes and reverses a polarity, in a second predetermined uniform interval, of display signals to said signal electrodes,

a combination of uniform polarity reversals in both said scanning electrodes and said signal electrodes causing a flicker in said liquid crystal display to be at a slanted orientation relative to said scanning electrodes and said signal electrodes (see Figures 6A, 6B, 8A, 8B).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Appellant presents the following ground for review by the Board of Patent Appeals and Interferences:

THE REJECTION UNDER 35 U.S.C. §103(A) BASED ON AAPA, FURTHER IN VIEW OF US PATENT 5,790,092 TO MORIYAMA

Whether the rejection under 35 U.S.C. § 103(a) can be maintained for any of the rejected claims 1-18, 25-42, 49-51, 53, and 54.

VII. ARGUMENTS

In the Office Action dated June 25, 2004, based on the AAPA, further in view of Moriyama, the Examiner relies upon the Appellant's Admitted Prior Art (AAPA) shown in Figures 12-16 and discussed at pages 1-7 of the specification. The Examiner concedes that this AAPA fails to reverse the polarity of the scanning and signal electrodes in the manner described by the rejected independent claims.

To overcome this deficiency, the Examiner relies upon US Patent 5,790,092 to Moriyama. The Examiner alleges that one of ordinary skill in the art would have been motivated to modify AAPA "... because it would provide a method for providing a liquid crystal display permitting an effectively reduced power dissipation in signal generation and/or effectively reduced vertical striped shades in frame control (col. 7, line 65-col. 8, line 2)."

Appellant submits that there are at least the following deficiencies in this rejection.

1. First, it is uncertain exactly what modification is being suggested by the Examiner for this rejection. That is, it would appear that the Examiner intends to simply replace the pixel drive mechanism of one of the AAPA configurations with that of Moriyama.

However, such simple replacement of mechanism would be improper, since it would clearly defeat the purpose of the AAPA drive mechanism and/or would clearly change its principle of operation. Both results are prohibited by MPEP §2143.02:

"*The proposed modification cannot render the prior art unsatisfactory for its intended purpose*." and

"*The proposed modification cannot change the principle of operation of a reference*."

2. On the other hand, if the Examiner's intent is to superimpose the checkerboard pattern shown in Figures 13A and 13B of Moriyama onto the pattern shown in one of the AAPA, then the Examiner needs to clarify details of this alleged "superposition" operation. That is, there will clearly be conflicts of polarity for specific pixels, as well as pixels which will receive the same polarity, when the patterns are superimposed. That is, although it might make sense to consider that pixels of the same polarity will simply receive the maximum voltage of that polarity, there is the problem that pixels having conflicts of polarity would have drive voltage neutralized.

Therefore, the simple superposition of patterns would be improper, since some pixels will clearly have zero drive voltage, thereby rendering the purpose of the AAPA device inoperative.

Stated slightly differently, Appellant points out that AAPA already incorporates a polarity reversal scheme to reduce flicker and that the Examiner will change, if not totally destroy, that scheme by merely superimposing another scheme, such as shown in Moriyama, onto that of the AAPA. If a flicker control scheme already exists, there is clearly no need to modify it without an articulated rationale, thereby again clearly evidencing the use of impermissible hindsight reconstruction.

That is, as shown in Figures 13A/13B of the instant application and described beginning at line 1 of page 4, the first AAPA technique has a delta reversing driving method oriented towards a delta pixel arrangement. As described at lines 1-3 of page 5, this scheme reduces the flicker for white colors.

If the technique in Moriyama's Figures 13A/13B is merely superimposed on this pattern of AAPA, as the Examiner urges, this technique to reduce flicker for white colors will be either destroyed or clearly modified.

Appellant further points out that one key aspect and aim of the present invention is that of reducing flicker for non-white colors (e.g., monochromatic color images). As clearly shown in Figures 15A/15B, the first AAPA suffers from the problem of flicker causing vertical lines because the two polarities cause two different currents.

By slanting the flicker that would normally occur during monochromatic images, the flicker is reduced for the human visual system. This slanting is done by combining polarity reversal in a specific method in both the horizontal dimension and the vertical dimension. Neither the first AAPA nor Moriyama suggests the specific combination of polarity reversal of the independent claims, which combination allows the monochromatic color image flicker to be slanted.

A similar argument applies for the second AAPA shown in Figures 14A/14B, in that the superimposition of Moriyama onto this existing polarity reversal scheme would modify, if not totally destroy, the existing method of reducing flicker, as described beginning at line 28 of page 5.

Thus, the incorporation of Moriyama into either the first AAPA or the second AAPA will modify or destroy the respective scheme that is already used to reduce flicker. Therefore, Appellant submits that the prior art rejection clearly demonstrates improper hindsight, fails to provide a reasonable motivation to combine the cited references, and fails to properly and reasonably analyze the limitations of the claimed invention.

3. The motivation to modify AAPA upon which the Examiner relies are taken out-of-context. These lines in columns 7 and 8 of Moriyama are directed to the benefits of that invention over the prior art of that reference. These benefits cannot be attributed to be applicable

in any and all other configurations without appropriate justification and, therefore, the motivation currently of record constitutes a *non-sequitur*. The Examiner would have the initial burden to demonstrate that AAPA would likewise benefit from either benefit.

More specifically, the details of the benefits of Moriyama over its described prior art, as shown in Figures 4A and 4B, are described beginning at line 58 of column 3 and, as described at lines 9-10 of column 4, relates to the reversal of polarity for every pixel. Therefore, the power savings, as alleged by the Examiner as a motivation to modify AAPA, is not applicable to the AAPA configurations shown in Figure 13A-14B. Since the Appellant's AAPA does not have the uniform checkerboard pattern shown in Moriyama Figures 4A and 4B, the Examiner has not met the initial burden of a reasonable allegation that power consumption would be reduced by merely making a conclusory statement based on lines of text taken out-of-context.

Additionally, the second alleged motivation given by the Examiner is a reduction in vertical striped shades. However, again, this motivation is taken out-of-context and is not applicable to the Appellant's AAPA, since its pattern is not the same as shown in 7A/7B, from which figures the benefit of the "reduced vertical striped shades in frame control" (see line 1 of column 8 of Moriyama) seems to derive. That is, lines 28-59 of column 7 seems to define the problem being addressed by the description in line 1 of column 8. However, the AAPA shown in Figures 13A-14B of the present application has not been demonstrated by the Examiner as sharing this configuration of voltages between columns.

Indeed, the prior art shown in Figures 4A and 4B of Moriyama already shows some type of slanting pattern in polarity reversals, although not one that satisfies the plain meaning of the language of the independent claims wherein the alternation of polarity occurs after every 2n, where n is a natural number. Therefore, if anything, Moriyama can only be described as teaching against the slanted pattern defined in the independent claims, since Moriyama does not make any suggest to further modify the slanted polarity pattern shown in Figure 4A/4B.

4. Most important, even if the pattern of Figures 13A and 13B of Moriyama were to be imposed on AAPA, the result would not satisfy the plain language of the rejected independent claims, as can be clearly discerned by one of ordinary skill in the art by comparing the pattern of Figures 13A and 13B of Moriyama with, for example, Figures 6A and 6B of the present application. It is perfectly clear that the checkerboard pattern of Moriyama differs from the slanted pattern of the present invention and that even the slanted polarity pattern of Figures

4A/4B of Moriyama differs from that described in the independent claims involving the "2n" pattern terminology.

That is, taking claim 1 as an example, the plain language of the claim requires that pieces of the scanning electrodes be reversed in polarity for every 2n pieces. The "pieces of scanning electrodes" is the horizontal axis in Figures 13A/13B (or Figures 4A,4B) of Moriyama, wherein the polarity reversal clearly occurs with <u>every electrode</u>, rather than with <u>every 2n electrodes,</u> such as shown in Figures 6A/6B of the present invention, wherein, for example, the red pixel R in line has a polarity reversal after 2x1 = 2 (e.g., n = 1) signal electrodes. This causes the red pixel to alternate in polarity in this line. The same polarity reversal would be present for the G and B pixels, thereby causing a slant in the flicker for these respective colors when a <u>monochrome region of color</u> is displayed.

Hence, turning to the clear language of the claims, there is no teaching or suggestion for: "... reversing a polarity of each of said data signals for <u>every 2n (n is a natural number) pieces of said scanning electrodes</u> ....", as required by claim 1.

The same "2n" pattern terminology is also present in independent claims 13, 25, 37, 49, 51, 53, and 54, so that these independent claims would likewise be allowable over AAPA/Moriyama.

Therefore, Appellant submits that claims 1-6, 13-18, 25-30, 37-42, 49, 51, 53, and 54 would be allowable.

<u>Independent Claims 7, 31, 50</u>

Independent claim 7 recites displaying a monochromatic color, using a reversing data signal defined during four consecutive scanning periods. In the rejection currently of record, the Examiner seems to consider this claim similar to claim 1. However, Appellant points out that the wording of independent claim seems closer in some respects to independent claim 19, which the Examiner considers as allowable over AAPA/Moriyama. Independent claims 31 and 50 also have wording similar to allowed claim 19.

Therefore, Appellant submits that claims 7-12, 31-36, and 50 should also be allowable over AAPA/Moriyama.

Thus, the Board is respectfully requested to remove the rejection currently of record for at least claims 1-18, 25-42, 49, and 50.

CONCLUSION

In view of the foregoing, Appellant submits that claims 1-18, 25-42, 49, 50, 53, and 54 are clearly and patentably distinct form the prior art of record and in condition for allowance, in addition to claims 19-24, 43-48, and 52, which are allowed. Thus, the Board is respectfully requested to remove the rejection for claims 1-18, 25-42, 49, and 50, thereby allowing claims 1-50 and 52 to be allowed, even if the rejection is maintained for claims 53 and 54. However, it is noted that even claims 53 and 54 would clearly also be allowable by adding a description that the slant relates to each specific color pixel, thereby relating the description more closely to monochrome color regions.

Please charge any deficiencies and/or credit any overpayments necessary to enter this paper to Attorney's Deposit Account number 50-0481.

Respectfully submitted,

Frederick Cooperrider

Dated: 11/3/06

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VIII. CLAIMS APPENDIX

The following claims reflect the claim amendments of the Amendment Under 37 CFR §1.111 filed on June 11, 2003.

1. (Rejected) A method for driving a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said method comprising:

reversing a polarity of each of said data signals for every 2n (n is a natural number) pieces of said scanning electrodes; and

reversing a polarity for every said signal electrode in said liquid crystal display and sequentially feeding each of said data signals having the reversed polarity to each of corresponding ones of said signal electrodes.

2. (Rejected) The method for driving the liquid crystal display according to Claim 1, wherein a position of each of color filters for red, green, and blue each corresponding to each of said liquid crystal cells in said liquid crystal display is deviated by one half of a pitch from a subsequent one of said scanning electrode, and said liquid crystal display comprises a delta type in which dot pixel portions made up of three primary colors including red, green, and blue that makes up one pixel portion are arranged in a triangular form.

3. (Rejected) The method for driving the liquid crystal display according to Claim 1, wherein said liquid crystal display comprises a mosaic type in which three color filters for red, green, and blue each corresponding to each of said liquid crystal cell are arranged in a repeated manner in this order in a scanning direction and arrangement of said three color filters is deviated by one or two pitches from a subsequent one of said scanning electrode.

4. (Rejected) The method for driving the liquid crystal display according to Claim 1, wherein said liquid crystal display comprises four dot pixel portion arranged type in which color filters made up of red, green, and blue color filters and an additional any one color filter selected out of said red, green, and blue color filters are arranged in a quadrangular form.

5. (Rejected) The method for driving the liquid crystal display according to Claim 1, wherein, in said liquid crystal display, a switching element used to drive said liquid crystal cell making up dot pixel portions having different colors is connected to one said signal electrode.

6. (Rejected) The method for driving the liquid crystal display according to Claim 1, wherein said liquid crystal display comprises an active-matrix type and its switching element comprises a thin film transistor.

7. (Rejected) A method for driving a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said

scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said method comprising:

displaying a monochromatic color by reversing a data signal that changes, relative to a common potential being applied to one terminal of all said liquid crystal cells and during four consecutive scanning periods, sequentially into a first signal having a first potential of a first polarity and a second signal having a second potential of said first polarity and into a first signal having a first potential of a second polarity and a second signal having a second potential of said second polarity, for every said signal electrode and by sequentially feeding said data signal having the reversed polarity to each of corresponding said signal electrodes.

8. (Rejected) The method for driving the liquid crystal display according to Claim 7, wherein a position of each of color filters for red, green, and blue each corresponding to each of said liquid crystal cells in said liquid crystal display is deviated by one half of a pitch from a subsequent said scanning electrode, and said liquid crystal display comprises a delta type in which dot pixel portions made up of three primary colors including red, green, and blue that makes up one pixel portion are arranged in a triangular form.

9. (Rejected) The method for driving the liquid crystal display according to Claim 7, wherein said liquid crystal display comprises a mosaic type in which three color filters for red, green, and blue each corresponding to each of said liquid crystal cell are arranged in a repeated manner in this order in a scanning direction and arrangement of said three color filters is deviated by one or two pitches from a subsequent said scanning electrode.

10: (Rejected) The method for driving the liquid crystal display according to Claim 7, wherein said liquid crystal display comprises a four dot pixel portion arranged type in which color filters made up of red, green, and blue color filters and an additional any one color filter selected out of said red, green, and blue color filters are arranged in a quadrangular form.

11. (Rejected) The method for driving the liquid crystal display according to Claim 7, wherein, in said liquid crystal display, a switching element used to drive said liquid crystal cell making up dot pixel portions having different colors is connected to one said signal electrode.

12. (Rejected) The method for driving the liquid crystal display according to Claim 7, wherein said liquid crystal display comprises an active-matrix type and its switching element comprises a thin film transistor.

13. (Rejected) A method for driving a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said method comprising:

displaying shades of gray by reversing a polarity of a data signal having a potential corresponding to an intermediate transmittance between a maximum transmittance and a minimum transmittance of said liquid crystal cell for every 2n (n is a natural number) pieces of said scanning electrodes in said liquid crystal display and for every said signal electrode and by

sequentially feeding said data signal having the reversed polarity to each of corresponding said signal electrodes.

14. (Rejected) The method for driving the liquid crystal display according to Claim 13, wherein a position of each of color filters for red, green, and blue each corresponding to each of said liquid crystal cells in said liquid crystal display is deviated by one half of a pitch from a subsequent said scanning electrode, and said liquid crystal display comprises a delta type in which dot pixel portions made up of three primary colors including red, green, and blue that makes up one pixel portion are arranged in a triangular form.

15. (Rejected) The method for driving the liquid crystal display according to Claim 13, wherein said liquid crystal display comprises a mosaic type in which three color filters for red, green, and blue each corresponding to each of said liquid crystal cell are arranged in a repeated manner in this order in a scanning direction and an arrangement of said three color filters is deviated by one or two pitches from a subsequent one of said scanning electrode.

16. (Rejected) The method for driving the liquid crystal display according to Claim 13, wherein said liquid crystal display comprises a four dot pixel portion arranged type in which color filters made up of red, green, and blue color filters and an additional any one color filter selected out of said red, green, and blue color filters are arranged in a quadrangular form.

17. (Rejected) The method for driving the liquid crystal display according to Claim 13, wherein, in said liquid crystal display, a switching element used to drive said liquid crystal cell making up dot pixel portions having different colors is connected to one said signal electrode.

18. (Rejected) The method for driving the liquid crystal display according to Claim 13, wherein said liquid crystal display comprises an active-matrix type and its switching element comprises a thin film transistor.

19. (Allowed) A method for driving a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said method comprising:

displaying gray-scale color of a monochromatic color by reversing a data signal for every said signal electrode and by sequentially feeding said data signal having the reversed polarity to each of corresponding said signal electrodes, said reversing being relative to a common potential applied to one terminal of all said liquid crystal cells, said data signal comprising a waveform defined during four consecutive scanning periods, said data signal waveform comprising combinations of:

a first signal having a first potential of a positive polarity, said first potential corresponding to an intermediate transmittance between a maximum transmittance and a minimum transmittance of said liquid crystal cell;

a second signal having a second potential of said positive polarity, said second potential corresponding to said minimum transmittance of said liquid crystal cell;

a third signal having a third potential of a negative polarity, said third potential corresponding to said intermediate transmittance between said maximum transmittance and said minimum transmittance of said liquid crystal cell; and

a fourth signal having a fourth potential of said negative polarity that corresponds to said minimum transmittance of said liquid crystal cell.

20. (Allowed) The method for driving the liquid crystal display according to Claim 19, wherein a position of each of color filters for red, green, and blue each corresponding to each of said liquid crystal cells in said liquid crystal display is deviated by one half of a pitch from a subsequent said scanning electrode, and said liquid crystal display comprises a delta type in which dot pixel portions made up of three primary colors including red, green, and blue that makes up one pixel portion are arranged in a triangular form.

21. (Allowed) The method for driving the liquid crystal display according to Claim 19, wherein said liquid crystal display comprises a mosaic type in which three color filters for red, green, and blue each corresponding to each of said liquid crystal cell are arranged in a repeated manner in this order in a scanning direction and arrangement of said three color filters is deviated by one or two pitches from a subsequent one of said scanning electrode.

22. (Allowed) The method for driving the liquid crystal display according to Claim 19, wherein said liquid crystal display comprises a four dot pixel portion arranged type in which color filters

made up of red, green, and blue color filters and additional any one color filter selected out of said red, green, and blue color filters are arranged in a quadrangular form.

23. (Allowed) The method for driving the liquid crystal display according to Claim 19, wherein, in said liquid crystal display, a switching element used to drive said liquid crystal cell making up dot pixel portions having different colors is connected to one said signal electrode.

24. (Allowed) The method for driving the liquid crystal display according to Claim 19, wherein said liquid crystal display comprises an active-matrix type and its switching element comprises a thin film transistor.

25. (Rejected) A driving circuit for a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit comprising:

a signal electrode driving circuit to reverse a polarity of each of said data signals for every 2n (n is a natural number) pieces of said scanning electrodes and for every signal electrode in said liquid crystal display and to sequentially feed said each of said data signals having reversed polarity to each of corresponding said signal electrodes.

26. (Rejected) The driving circuit for a liquid crystal display according to Claim 25, wherein a position of each of color filters for red, green, and blue each corresponding to each of said liquid crystal cells in said liquid crystal display is deviated by one half of a pitch from subsequent said scanning electrode and said liquid crystal display comprises a delta type in which dot pixel portions made up of three colors including red, green, and blue that makes up one pixel portion are arranged in a triangular form.

27. (Rejected) The driving circuit for a liquid crystal display according to Claim 25, wherein said liquid crystal display comprises a mosaic-type in which three color filters for red, green, and blue each corresponding to each of said liquid crystal cell are arranged in a repeated manner in this order in a scanning direction and arrangement of said three color filters is deviated by one or two pitches from a subsequent one of said scanning electrode.

28. (Rejected) The driving circuit for a liquid crystal display according to Claim 25, wherein said liquid crystal display comprises a four dot pixel portion arranged type in which said color filters made up of said red, green, and blue color filters and an additional any one color filter selected out of said red, green, and blue color filters are arranged in a quadrangular form.

29. (Rejected) The driving circuit for a liquid crystal display according to Claim 25, wherein, in said liquid crystal display, a switching element used to drive said liquid crystal cell making up said dot pixel portion having different colors is connected to one said signal electrode.

30. (Rejected) The driving circuit for a liquid crystal display according to Claim 25, wherein said liquid crystal display comprises an active-matrix type and its said switching element comprises a thin film transistor.

31. (Rejected) A driving circuit for a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit comprising:

a signal electrode driving circuit to reverse a data signal that changes, relative to a common potential being applied to one terminal of all said liquid crystal cells and during four consecutive scanning periods, sequentially into a first signal having a first potential of a first polarity and a second signal having a second potential of said first polarity and into a first signal having a first potential of a second polarity and a second signal having a second potential of said second polarity, for said every signal electrode and to sequentially feed said data signal having the reversed polarity to each of corresponding said signal electrodes.

32. (Rejected) The driving circuit for a liquid crystal display according to Claim 31, wherein a position of each of color filters for red, green, and blue each corresponding to each of said liquid crystal cells in said liquid crystal display is deviated by one half of a pitch from a subsequent said scanning electrode, and said liquid crystal display comprises a delta type in which dot pixel

portions made up of three colors including red, green, and blue that make up one pixel portion are arranged in a triangular form.

33. (Rejected) The driving circuit for a liquid crystal display according to Claim 31, wherein said liquid crystal display comprises a mosaic-type in which three color filters for red, green, and blue each corresponding to each of said liquid crystal cell are arranged in a repeated manner in this order in a scanning direction and arrangement of said three color filters is deviated by one or two pitches from a subsequent said scanning electrode.

34. (Rejected) The driving circuit for a liquid crystal display according to Claim 31, wherein said liquid crystal display comprises a four dot pixel portion arranged type in which said color filters made up of said red, green, and blue color filters and an additional any one color filter selected out of said red, green, and blue color filters are arranged in a quadrangular form.

35. (Rejected) The driving circuit for a liquid crystal display according to Claim 31, wherein, in said liquid crystal display, a switching element used to drive said liquid crystal cell making up said dot pixel portion having different colors is connected to one said signal electrode.

36. (Rejected) The driving circuit for a liquid crystal display according to Claim 31, wherein said liquid crystal display comprises an active-matrix type and its said switching element comprises a thin film transistor.

37. (Rejected) A driving circuit for a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit comprising:

a signal electrode driving circuit to reverse a polarity of a data signal having a potential corresponding to an intermediate transmittance between maximum and minimum transmittance of said liquid crystal cell for every 2n (n is a natural number) pieces of said scanning electrode in said liquid crystal display and for every said signal electrode and to sequentially feed said data signal having the reversed polarity to each of corresponding signal electrodes.

38. (Rejected) The driving circuit for a liquid crystal display according to Claim 37, wherein a position of each of color filters for red, green, and blue each corresponding to each of said liquid crystal cells in said liquid crystal display is deviated by one half of a pitch from a subsequent said scanning electrode and said liquid crystal display comprises a delta type in which dot pixel portions made up of three colors including red, green, and blue that makes up one pixel portion are arranged in a triangular form.

39. (Rejected) The driving circuit for a liquid crystal display according to Claim 37, wherein said liquid crystal display comprises a mosaic-type in which three color filters for red, green, and blue each corresponding to each of said liquid crystal cell are arranged in a repeated manner in

this order in a scanning direction and arrangement of said three color filters is deviated by one or two pitches from a subsequent said scanning electrode.

40. (Rejected) The driving circuit for a liquid crystal display according to Claim 37, wherein said liquid crystal display comprises a four dot pixel portion arranged type in which said color filters made up of said red, green, and blue color filters and an additional any one color filter selected out of said red, green, and blue color filters are arranged in a quadrangular form.

41. (Original claim) The driving circuit for a liquid crystal display according to Claim 37, wherein, in said liquid crystal display, a switching element used to drive said liquid crystal cell making up said dot pixel portion having different colors is connected to one said signal electrode.

42. (Rejected) The driving circuit for a liquid crystal display according to Claim 37, wherein said liquid crystal display comprises an active-matrix type and its said switching element comprises a thin film transistor.

43. (Allowed) A driving circuit for a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit comprising:

a signal electrode driving circuit to reverse a data signal for every said signal electrode and by sequentially feeding said data signal having the reversed polarity to each of corresponding said signal electrodes, said reversing being relative to a common potential applied to one terminal of all said liquid crystal cells, said data signal comprising a waveform defined during four consecutive scanning periods, said data signal waveform comprising combinations of:

a first signal having a first potential of a positive polarity, said first potential corresponding to an intermediate transmittance between a maximum transmittance and a minimum transmittance of said liquid crystal cell;

a second signal having a second potential of said positive polarity, said second potential corresponding to said minimum transmittance of said liquid crystal cell;

a third signal having a third potential of a negative polarity, said third potential corresponding to said intermediate transmittance between said maximum transmittance and said minimum transmittance of said liquid crystal cell; and

a fourth signal having a fourth potential of said negative polarity that corresponds to said minimum transmittance of said liquid crystal cell.

44. (Allowed) The driving circuit for a liquid crystal display according to Claim 43, wherein a position of each of color filters for red, green, and blue each corresponding to each of said liquid crystal cells in said liquid crystal display is deviated by one half of a pitch from a subsequent said scanning electrode and said liquid crystal display comprises a delta type in which dot pixel portions made up of three colors including red, green, and blue that make- up one pixel portion are arranged in a triangular form.

45. (Allowed) The driving circuit for a liquid crystal display according to Claim 43, wherein said liquid crystal display comprises a mosaic-type in which three color filters for red, green, and blue each corresponding to each of said liquid crystal cell are arranged in a repeated manner in this order in a scanning direction and arrangement of said three color filters is deviated by one or two pitches from a subsequent said scanning electrode.

46. (Allowed) The driving circuit for a liquid crystal display according to Claim 43, wherein said liquid crystal display comprises a four dot pixel portion arranged type in which said color filters made up of said red, green, and blue color filters and an additional any one color filter selected out of said red, green, and blue color filters are arranged in a quadrangular form.

47. (Allowed) The driving circuit for a liquid crystal display according to Claim 43, wherein, in said liquid crystal display, a switching element used to drive said liquid crystal cell making up said dot pixel portion having different colors is connected to one said signal electrode.

48. (Allowed) The driving circuit for a liquid crystal display according to Claim 43, wherein said liquid crystal display comprises an active-matrix type and its said switching element comprises a thin film transistor.

49. (Rejected) An image display device comprising:

a driving circuit for a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row

direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit including:

a signal electrode driving circuit to reverse a polarity of each of said data signals for every 2n (n is a natural number) pieces of said scanning electrodes and for every signal electrode in said liquid crystal display and to sequentially feed said each of said data signals having reversed polarity to each of corresponding said signal electrodes.

50. (Rejected) An image display device comprising:

a driving circuit for a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit including:

a signal electrode driving circuit to reverse a data signal that changes, relative to a common potential being applied to one terminal of all said liquid crystal cells and during four consecutive scanning periods, sequentially into a first signal having a first potential of a positive polarity and a second signal having a second potential of said positive polarity and into a first signal having a first potential of a negative polarity and a second signal having a second potential of said negative polarity, for said every signal electrode and to sequentially feed said data signal having the reversed polarity to each of corresponding said signal electrodes.

51. (Rejected) An image display device comprising:

a driving circuit for a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit including:

a signal electrode driving circuit to reverse a polarity of a data signal having a potential corresponding to an intermediate transmittance between maximum and minimum transmittance of said liquid crystal cell for every 2n (n is a natural number) pieces of said scanning electrode in said liquid crystal display and for every said signal electrode and to sequentially feed said data signal having the reversed polarity to each of corresponding signal electrodes.

52. (Allowed) An image display device comprising:

a driving circuit for a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit including:

a signal electrode driving circuit to reverse a data signal made up, relative to a common potential being applied to one terminal of all said liquid crystal cells and during four consecutive scanning periods, of combinations of a signal having a potential of a positive polarity that corresponds to an intermediate transmittance between a maximum transmittance and a minimum transmittance of said liquid crystal cell and of a signal having a potential of said positive polarity that corresponds to said minimum transmittance of said liquid crystal cell and of combinations of a signal having a potential of a negative polarity that corresponds to said intermediate transmittance between said maximum and minimum transmittance of said liquid crystal cell and of a signal having a potential of said negative polarity that corresponds to said minimum transmittance of said liquid crystal cell, for every said signal electrode and to sequentially feed said data signal having the reversed polarity to each of corresponding said signal electrodes.

53. (Rejected) A method of reducing flicker on a liquid crystal display, said method comprising:

reversing a polarity of first display signals related to a horizontal dimension in a first uniform interval; and

reversing a polarity of second display signals related to a vertical dimension in a second uniform interval,

wherein concurrent uniform reversals of polarity in both said horizontal dimension and said vertical dimension causes a flicker to be at an angle slanted relative to said horizontal dimension and said vertical dimension.

54. (Rejected) A liquid crystal display, comprising:

a plurality of scanning electrodes placed at specified intervals in a row direction;

a plurality of signal electrodes placed at specified intervals in a column direction; and

a controller that reverses a polarity, in a first predetermined uniform interval, of display signals to said scanning electrodes and reverses a polarity, in a second predetermined uniform interval, of display signals to said signal electrodes,

a combination of uniform polarity reversals in both said scanning electrodes and said signal electrodes causing a flicker in said liquid crystal display to be at a slanted orientation relative to said scanning electrodes and said signal electrodes.

IX. EVIDENCE APPENDIX

(NONE)

X. RELATED PROCEEDINGS APPENDIX

(NONE)